UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604

SUBJECT:	CLEAN AIR ACT INSPECTION REPORT Bio Town Biogas LLC & Bio Town Ag Incorporated, Reynolds, Indiana
FROM:	Sasha Letuchy, Environmental Engineer AECAB (MI/WI)
THRU:	Sarah Marshall, Section Supervisor AECAB (MI/WI)
TO:	File

BASIC INFORMATION

Facility Name: Bio Town Biogas LLC & Bio Town Ag Incorporated

Facility Location: 402 W. 100 North Reynolds, Indiana 47980

Date of Inspection: 10/26/2022

EPA Inspector(s):
1. Sasha Letuchy, Environmental Engineer
2. Valeria Apolinario, Environmental Engineer

Other Attendees:
1. Saundra Smart, Bio Town Biogas LLC & Bio Town Ag Incorporated, Regulatory Associate

Contact Email Address: saundra@biotownag.com

Purpose of Inspection: To assess compliance with the facility's Title V Permit and Clean Air Act Regulations

Facility Type: Biogas facility

Regulations Central to Inspection: The facility is required to operate catalytic oxidizers for CO control at all times the anaerobic digestors are in operation and to maintain a continuous temperature monitor at the inlet or outlet of each catalyst bed. The 3-hour block average inlet or outlet temperature is to be between 450-1350 °F. The facility is required to observe the duct

pressure drop on each engine monthly; the duct pressure drop operating range is derived from the last valid stack test. The facility is also required to conduct daily H2S concentration measurements of the digestor gas burned in the engines and flares.

Arrival Time: 1:20 pm
Departure Time: 4:26 pm

Inspection Type:
☒ Unannounced Inspection
☐ Announced Inspection

OPENING CONFERENCE

☒ Presented Credentials
☒ Stated authority and purpose of inspection
☒ Provided Small Business Resource Information Sheet – provided via email
☒ Provided CBI warning to facility

The following information was obtained verbally from Saundra Smart unless otherwise noted.

Company Ownership: Recently, the permit was modified to add Bio Town Biogas LLC. Previously, the permit was issued only to Bio Town Ag Incorporated.

Process Description:
The facility produces biogas from anaerobic digestion of animal manure and other biologically based waste (mostly corn/food waste). The raw materials (cattle and pig manure from onsite and food waste from offsite) are combined in one of two mix pit and mechanically mixed until it meets a specific solids percentage. Material from the mix pits is fed into a hold/equalization tank. Material from the hold tank is continuously fed into one of six anaerobic digesters.

The anaerobic digesters are plug flow. The material enters on one end of the digester and then proceeds through the digester to the exit. Gas collection piping is located throughout the digester.

The biogas produced in the anaerobic digesters is combusted in one of six existing engines to produce electricity or upgrade to pipeline quality for distribution. A seventh biogas engine is coming online. The facility also operates one natural gas engine. Each engine is equipped with a catalytic oxidizer.

If the biogas cannot be consumed by the engines, it is sent to one of six flares. Eight flares are currently permitted (two have not yet been constructed). Flares are used infrequently. If certain feedstocks cause a bump is biogas production, the facility adjusts the feedrate, in order to avoid flaring.

Effluent from the digesters undergoes liquid solid separation to product digestate. The liquid solid separation consists of roller presses, screw presses, decanters, and centrifuges. The liquid removed in the process is transferred to a lagoon. The solids, or digestate, is stored in a bunker and then hauled offsite to a compost pad.

The facility is equipped with an ammonia stripper which removes ammonia from the liquid phase of a digestate through the application of gas flow to transfer the ammonia from the liquid phase to gas phase. The stripped gas is transferred into an acid solution to generate an ammonium sulfate fertilizer. Produce ammonia sulfate is stored in one of eight 30,000 gallon ammonia sulfate tanks. High levels of ammonia are inhibitors to the anaerobic digestion process by negatively impacting methanogen growth. The facility has not been using the ammonia stripper, because ammonia levels have been low.

Staff Interview: Parametric monitoring on the catalytic oxidizers consists of continuously temperature monitoring at the inlet (15-minute increments and 3-hour block averages) and monthly pressure drop monitoring across the catalyst. Stack testing for NOx, VOCs, and CO is conducted on the biogas engines after a certain number of run hours. On the natural gas engines, stack testing also include formaldehyde. The facility had previously applied for an Alternative Monitoring Plan (AMP) to reduce the frequency of testing and has recently submitted another AMP request.

Parametric monitoring on the flare consists of continuous flow monitoring.

TOUR INFORMATION

EPA Tour of the Facility: Yes

Data Collected and Observations:
EPA toured the facility. The mix pits are open to atmosphere. EPA noted that the equalizer tank and the end of the digesters are open to atmosphere. EPA noted that the facility uses a portable H2S monitor to conduct the daily H2S monitoring.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

RECORDS REVIEW

EPA reviewed several spreadsheets used by the facility for environmental compliance. These spreadsheets included:

1) Engine catalyst differential pressure. All differential pressure recordings from the week of 10/4/2022 were within the ranges from the previous stack test reports, as recorded by the facility.
2) Engine inlet temperature. All temperatures were within the 450-1350°F range.
3) Emission calculations

CLOSING CONFERENCE

☒ Provided U.S. EPA point of contact to the facility

Requested documents:

1. Last triannual emissions report sent to IDEM
2. Records of the 4 hour rolling average temperature of the catalyst inlet for NG-01 from October 2022.
3. The latest performance tests utilized to determine the duct pressure drop range for each catalytic oxidizer on each engine
4. Duct pressure drop records from the past 6 months
5. Past 4 Quarterly deviation and compliance monitoring reports

DIGITAL SIGNATURES

Report Author: ALEXANDRA LETUCHY Digitally signed by ALEXANDRA LETUCHY Date: 2022.12.23 22:09:27 -06'00'

Section Supervisor: SARAH MARSHALL Digitally signed by SARAH MARSHALL Date: 2022.12.24 14:59:20 -06'00'

APPENDICES AND ATTACHMENTS

1. Digital Image Log

Facility Name: Bio Town Biogas LLC & Bio Town Ag Incorporated
Facility Location: 402 W. 100 North Reynolds, Indiana 47980
Date of Inspection: October 26, 2022

APPENDIX A: DIGITAL IMAGE LOG

1. **Inspector Name:** Valeria Apolonario	2. **Archival Record Location:** ***Electronic Records Center***

Image Number	File Name	Date and Time (incl. Time zone and DST)	Description of Image
1	IMG_0270	2022:10:26 14:06:39	Mix pit for digestor
2	IMG_0271	2022:10:26 14:06:47	Mix pit for digestor
3	IMG_0272	2022:10:26 14:08:25	Open effluent pit for other digestor
4	IMG_0273	2022:10:26 14:09:52	Open effluent pit for other digestor
5	IMG_0274	2022:10:26 14:11:15	Open effluent pit for other digestor
6	IMG_0275	2022:10:26 14:12:17	Ductwork to controls
7	IMG_0276	2022:10:26 14:12:37	Ductwork to flares
8	IMG_0277	2022:10:26 14:13:06	Ductwork to controls
9	IMG_0278	2022:10:26 14:16:39	Ammonium sulfate storage